

# SEQUENCE LISTING

<110> Walke, D. Wade  
Donoho, Gregory  
Scoville, John  
Hilbun, Erin,  
Zambrowicz, Brian  
Turner, C. Alexander Jr.

<120> Novel Human Proteins and Polynucleotides Encoding the Same

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<150> US 60/192,218

<151> 2000-03-27

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| aacgggtctc | ttcactcagc | caactcyacc  | accaacctgg | cagctattga | gccacagccc  | 1680       |     |
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| tatgaagaac | ctctgggggca | acctcccccg  | ttcactcaaa | agttacggag | cagagaagtt  | 840  |
| ccagaaggaa | ctcgagtaca  | gttggattgc  | atagtggtag | gaattccacc | acctcaagta  | 900  |
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| ggaaatctgc | actcactgac  | cattgcggaa  | gcctttgaag | aggacacagg | acgctattcc  | 1020 |
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| Gln | Asp | Asp | Ser | Ile | Glu | Ala | Ser | Thr | Ser | Ile | Ser | Gln | Leu | Leu | Arg |
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| Glu | Ser | Tyr | Leu | Ala | Glu | Thr | Arg | His | Arg | Gly | Asn | Asn | Glu | Arg | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Arg | Ala | Glu | Pro | Ser | Ser | Asn | Pro | Cys | His | Phe | Gly | Ser | Pro | Ser | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ala | Ala | Glu | Gly | Gly | Gly | Gly | Gln | Asp | Asp | Leu | Pro | Asp | Leu | Ser | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Leu | Ser | Gln | Glu | Glu | Leu | Asp | Glu | Ser | Val | Asn | Leu | Ala | Arg | Leu |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Ala | Ile | Asn | Tyr | Asp | Pro | Leu | Glu | Lys | Ala | Asp | Glu | Thr | Gln | Ala | Arg |
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| Lys | Arg | Leu | Ser | Pro | Asp | Gln | Met | Lys | His | Ser | Pro | Asn | Leu | Ser | Phe |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Pro | Asn | Phe | Cys | Gln | Asp | Asn | Pro | Arg | Ser | Pro | Thr | Ser | Ser | Lys |
|     | 115 |     |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Glu | Ser | Pro | Gln | Glu | Ala | Lys | Arg | Pro | Gln | Tyr | Cys | Ser | Glu | Thr | Gln |
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| Ser | Lys | Lys | Val | Phe | Leu | Asn | Lys | Ala | Ala | Asp | Phe | Ile | Glu | Glu | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
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|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Cys | Lys | Asn | His | Lys | Ser | Lys | Leu | Glu | Ser | Gln | Asn | Lys | Val | Met | Gln |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Glu | Asn | Ser | Ser | Ser | Phe | Ser | Asp | Leu | Ser | Glu | Arg | Arg | Glu | Arg | Ser |
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| Ala | Ser | Glu | Ala | Ala | Gly | Gly | Asp | Thr | Thr | Pro | Gly | Ser | Ser | Pro | Ser |

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 Lys Leu Arg Ser Arg Glu Val Pro Glu Gly Thr Arg Val Gln Leu Asp  
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 Cys Ile Val Val Gly Ile Pro Pro Gln Val Arg Trp Tyr Cys Glu  
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 Gly Lys Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala Gly  
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 Asn His Ala Leu Glu Gln Glu Ala Lys Arg Arg Glu Ala Glu Gln  
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 Ala Ala Ser Glu Ala Ala Gly Gly Asp Thr Thr Pro Gly Ser Ser Pro  
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 Ser Ala Glu Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly  
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 370 375 380  
 Cys Arg Asp Trp Met Glu Asn Leu Ser Leu Gln Leu Leu Cys Leu Gln  
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| ccttgccatt  | tcggcagtc  | ttctggggcc  | gctgaaggag  | gcggaggcca | agatgacctt  | 180  |
| ccagatcttt  | cagcctttct | gagccaagaa  | gaattagacg  | aaagtgtcaa | tttggcaaga  | 240  |
| ctggccatca  | attacgaccc | tttggagaag  | gcagatgaaa  | ctcaagctag | aaaacgactt  | 300  |
| tctcctgata  | agatgaaaca | ctcacctaata | ttaagttttg  | agcctaactt | ctgccaggat  | 360  |
| aaccctcgaa  | gtcccaccag | ctctaaagaa  | agcccccagg  | aggcaaaaag | gccacagtat  | 420  |
| tggttctgaaa | cccagtgcaa | aaaagtattt  | ttaaataagg  | ctgccgactt | cattgaagag  | 480  |
| ctatcctccc  | ttttcaaata | ccacagctcc  | aaaaggatta  | gacctcgtgc | ctgcaaaaac  | 540  |
| cacaagagta  | aactggaatc | tcaaaaacaaa | gttatgcagg  | aaaacagctc | cagttttctca | 600  |
| gatctgtcag  | aaagacgaga | aagatcttct  | gttccccatcc | ctatccctgc | ggataccagg  | 660  |
| gataatgaag  | tgaatcacgc | cctggaacag  | caggaagcca  | agaggcgtga | agcggagcag  | 720  |
| gctgccagtg  | aggcggctgg | tggagacact  | acaccagggt  | cttccccttc | atctctgtac  | 780  |
| tatgaagaac  | ctctggggca | acctcccccg  | ttcactcaaa  | agttacggag | cagagaagtt  | 840  |
| ccagaaggaa  | ctcgagtaca | gttggattgc  | atagtggtag  | gaattccacc | acctcaagta  | 900  |
| agggtgtact  | gtgaaggcaa | ggagcttgaa  | aattccccag  | atattcacat | cgtccaggca  | 960  |
| ggaaatctgc  | actcactgac | cattgcggaa  | gcctttgaag  | aggacacagg | acgctattcc  | 1020 |
| tgctttgctt  | ctaacatcta | tgggacagat  | tcgacttctg  | ctgagattta | tatagaaggg  | 1080 |
| gtttcttctt  | ctgactcaga | aggcgaccct  | aacaaggaag  | agatgaatcg | tgtcagagcc  | 1140 |
| ccaccaatta  | cttgcaggga | ttggatggaa  | aacctatcat  | tgcagctcct | gtgtttacaa  | 1200 |
| aggtaa      |            |             |             |            |             | 1206 |

<210> 8

<211> 401

<212> PRT

<213> homo sapiens

<400> 8

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Asp | Asp | Ser | Ile | Glu | Ala | Ser | Thr | Ser | Ile | Ser | Gln | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Arg | Glu | Ser | Tyr | Leu | Ala | Glu | Thr | Arg | His | Arg | Gly | Asn | Asn | Glu | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Arg | Ala | Glu | Pro | Ser | Ser | Asn | Pro | Cys | His | Phe | Gly | Ser | Pro | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ala | Ala | Glu | Gly | Gly | Gly | Gly | Gln | Asp | Asp | Leu | Pro | Asp | Leu | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |
| Ala | Phe | Leu | Ser | Gln | Glu | Leu | Asp | Glu | Ser | Val | Asn | Leu | Ala | Arg |     |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |
| Leu | Ala | Ile | Asn | Tyr | Asp | Pro | Leu | Glu | Lys | Ala | Asp | Glu | Thr | Gln | Ala |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Arg | Lys | Arg | Leu | Ser | Pro | Asp | Gln | Met | Lys | His | Ser | Pro | Asn | Leu | Ser |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Phe | Glu | Pro | Asn | Phe | Cys | Gln | Asp | Asn | Pro | Arg | Ser | Pro | Thr | Ser | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Glu | Ser | Pro | Gln | Glu | Ala | Lys | Arg | Pro | Gln | Tyr | Cys | Ser | Glu | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gln | Ser | Lys | Lys | Val | Phe | Leu | Asn | Lys | Ala | Ala | Asp | Phe | Ile | Glu | Glu |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | Ser | Ser | Leu | Phe | Lys | Ser | His | Ser | Ser | Lys | Arg | Ile | Arg | Pro | Arg |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ala | Cys | Lys | Asn | His | Lys | Ser | Lys | Leu | Glu | Ser | Gln | Asn | Lys | Val | Met |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |
| Gln | Glu | Asn | Ser | Ser | Ser | Phe | Ser | Asp | Leu | Ser | Glu | Arg | Arg | Glu | Arg |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
| Ser | Ser | Val | Pro | Ile | Pro | Ile | Pro | Ala | Asp | Thr | Arg | Asp | Asn | Glu | Val |

|   |                     |     |
|---|---------------------|-----|
| 210   | 215                 | 220 |
| Asn His Ala Leu Glu Gln Gln Glu Ala Lys Arg | Arg Glu Ala Glu Gln |     |
| 225   | 230                 | 235 |
| Ala Ala Ser Glu Ala Ala Gly Gly Asp Thr Thr | Pro Gly Ser Ser Pro | 240 |
|   | 245                 | 250 |
| Ser Ser Leu Tyr Tyr Glu Glu Pro Leu Gly Gln | Pro Pro Arg Phe Thr | 255 |
|   | 260                 | 265 |
| Gln Lys Leu Arg Ser Arg Glu Val Pro Glu Gly | Thr Arg Val Gln Leu | 270 |
|   | 275                 | 280 |
| Asp Cys Ile Val Val Gly Ile Pro Pro Pro Gln | Val Arg Trp Tyr Cys | 285 |
|   | 290                 | 295 |
| Glu Gly Lys Glu Leu Glu Asn Ser Pro Asp Ile | His Ile Val Gln Ala | 300 |
| 305   | 310                 | 315 |
| Gly Asn Leu His Ser Leu Thr Ile Ala Glu Ala | Phe Glu Glu Asp Thr | 320 |
|   | 325                 | 330 |
| Gly Arg Tyr Ser Cys Phe Ala Ser Asn Ile Tyr | Gly Thr Asp Ser Thr | 335 |
|   | 340                 | 345 |
| Ser Ala Glu Ile Tyr Ile Glu Gly Val Ser Ser | Ser Asp Ser Glu Gly | 350 |
|   | 355                 | 360 |
| Asp Pro Asn Lys Glu Glu Met Asn Arg Val Arg | Ala Pro Pro Ile Thr | 365 |
|   | 370                 | 375 |
| Cys Arg Asp Trp Met Glu Asn Leu Ser Leu Gln | Leu Leu Cys Leu Gln | 380 |
| 385   | 390                 | 395 |
| Arg   |                     | 400 |

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 <212> DNA  
 <213> homo sapiens

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| ttagctgaaa ccagacatcg gggaaacaat gagaggagtc gagcggagcc ctcctccaac   | 120  |
| ccttgccatt tcggcagtc ttctggggcc gctgaaggag gcggaggcca agatgacctt    | 180  |
| ccagatcttt cagcctttct gagccaagaa gaattagacg aaagtgtcaa tttggcaaga   | 240  |
| ctggccatca attacgaccc ttgggagaag gcagatgaaa ctcaagctag aaaacgactt   | 300  |
| tctcctgatac agatgaaaca ctcacctaata ttaagttttg agcctaactt ctgccaggat | 360  |
| aaccctcgaa gtcccaccag ctctaaagaa agcccccagg aggcaaaaag gccacagtat   | 420  |
| tgttctgaaa cccagtcctaa aaaagtattt ttaaataagg ctgccgactt cattgaagag  | 480  |
| ctatcctccc ttttcaaata ccacagctcc aaaaggatta gacctcgtgc ctgcaaaaac   | 540  |
| cacaagagta aactggaatc tcaaaacaaa gttatgcagg aaaacagctc cagtttctca   | 600  |
| gatctgtcag aaagacgaga aagatcttct gttcccatcc ctatccctgc ggataccagg   | 660  |
| gataatgaag tgaatcacgc cctggaacag caggaagcca agaggcgtga agcggagcag   | 720  |
| gctgccagtg aggcggctgg tggagacact acaccagggt cttccccttc atctctgtac   | 780  |
| tatgaagaac ctctggggca acctccccgg ttactcaaa agttacggag cagagaagtt    | 840  |
| ccagaaggaa ctcgagtaca gttggattgc atagtggtag gaattccacc acctcaagta   | 900  |
| aggtggtact gtgaaggcaa ggagcttgaa aattccccag atattcacat cgtccaggca   | 960  |
| ggaaatctgc actcactgac cattgcggaa gcctttgaag aggacacagg acgctattcc   | 1020 |
| tgctttgctt ctaacatcta tgggacagat tcgacttctg ctgagattta tatagaaggg   | 1080 |
| gtttcttctt ctgactcaga aggcgaccct aacaaggaag agatgaatcg aatccagaag   | 1140 |
| ccaaatgagg tgtcatctcc tcccactacc tctgcagtca ttccctccagc agtaccceaa  | 1200 |
| gcccagcatt tgggtggcca acctcgtgtg gcaaccatcc agcagtgtca gagccccacc   | 1260 |
| aattacttgc agggattgga tggaaaacct atcattgcag ctctgtgtt taaaaggta     | 1320 |
| ataaaaaatat tacttctttc tgtcatggct ttaaagatac cacagcacc aaagttatag   | 1380 |

<210> 10  
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 <212> PRT  
 <213> homo sapiens

<400> 10

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Asp | Asp | Ser | Ile | Glu | Ala | Ser | Thr | Ser | Ile | Ser | Gln | Leu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |
| Arg | Glu | Ser | Tyr | Leu | Ala | Glu | Thr | Arg | His | Arg | Gly | Asn | Asn | Glu | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Ser | Arg | Ala | Glu | Pro | Ser | Ser | Asn | Pro | Cys | His | Phe | Gly | Ser | Pro | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Ala | Ala | Glu | Gly | Gly | Gly | Gly | Gln | Asp | Asp | Leu | Pro | Asp | Leu | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | Phe | Leu | Ser | Gln | Glu | Glu | Leu | Asp | Glu | Ser | Val | Asn | Leu | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Leu | Ala | Ile | Asn | Tyr | Asp | Pro | Leu | Glu | Lys | Ala | Asp | Glu | Thr | Gln | Ala |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     | 95  |     |
| Arg | Lys | Arg | Leu | Ser | Pro | Asp | Gln | Met | Lys | His | Ser | Pro | Asn | Leu | Ser |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Phe | Glu | Pro | Asn | Phe | Cys | Gln | Asp | Asn | Pro | Arg | Ser | Pro | Thr | Ser | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Lys | Glu | Ser | Pro | Gln | Glu | Ala | Lys | Arg | Pro | Gln | Tyr | Cys | Ser | Glu | Thr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gln | Ser | Lys | Lys | Val | Phe | Leu | Asn | Lys | Ala | Ala | Asp | Phe | Ile | Glu | Glu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | Ser | Ser | Leu | Phe | Lys | Ser | His | Ser | Ser | Lys | Arg | Ile | Arg | Pro | Arg |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ala | Cys | Lys | Asn | His | Lys | Ser | Lys | Leu | Glu | Ser | Gln | Asn | Lys | Val | Met |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     | 190 |     |     |     |
| Gln | Glu | Asn | Ser | Ser | Ser | Phe | Ser | Asp | Leu | Ser | Glu | Arg | Arg | Glu | Arg |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Ser | Val | Pro | Ile | Pro | Ile | Pro | Ala | Asp | Thr | Arg | Asp | Asn | Glu | Val |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Asn | His | Ala | Leu | Glu | Gln | Gln | Glu | Ala | Lys | Arg | Arg | Glu | Ala | Glu | Gln |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ala | Ala | Ser | Glu | Ala | Ala | Gly | Gly | Asp | Thr | Thr | Pro | Gly | Ser | Ser | Pro |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Ser | Ser | Leu | Tyr | Tyr | Glu | Glu | Pro | Leu | Gly | Gln | Pro | Pro | Arg | Phe | Thr |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gln | Lys | Leu | Arg | Ser | Arg | Glu | Val | Pro | Glu | Gly | Thr | Arg | Val | Gln | Leu |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Asp | Cys | Ile | Val | Val | Gly | Ile | Pro | Pro | Pro | Gln | Val | Arg | Trp | Tyr | Cys |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Glu | Gly | Lys | Glu | Leu | Glu | Asn | Ser | Pro | Asp | Ile | His | Ile | Val | Gln | Ala |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Gly | Asn | Leu | His | Ser | Leu | Thr | Ile | Ala | Glu | Ala | Phe | Glu | Glu | Asp | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Gly | Arg | Tyr | Ser | Cys | Phe | Ala | Ser | Asn | Ile | Tyr | Gly | Thr | Asp | Ser | Thr |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     | 350 |     |     |     |
| Ser | Ala | Glu | Ile | Tyr | Ile | Glu | Gly | Val | Ser | Ser | Ser | Asp | Ser | Glu | Gly |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Asp | Pro | Asn | Lys | Glu | Glu | Met | Asn | Arg | Ile | Gln | Lys | Pro | Asn | Glu | Val |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Ser | Pro | Pro | Thr | Thr | Ser | Ala | Val | Ile | Pro | Pro | Ala | Val | Pro | Gln |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |

Ala Gln His Leu Val Ala Gln Pro Arg Val Ala Thr Ile Gln Gln Cys  
 405 410 415  
 Gln Ser Pro Thr Asn Tyr Leu Gln Gly Leu Asp Gly Lys Pro Ile Ile  
 420 425 430  
 Ala Ala Pro Val Phe Thr Lys Val Ile Lys Ile Leu Leu Leu Ser Val  
 435 440 445  
 Met Ala Leu Lys Ile Pro Gln His Pro Lys Leu  
 450 455

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 <212> DNA  
 <213> homo sapiens

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 ccttgccatt tcggcagtc tttctggggcc gctgaaggag gcggaggcca agatgacctt 180  
 ccagatcttt cagcctttct gagccaagaa gaattagacg aaagtgtcaa tttggcaaga 240  
 ctggccatca attacgaccc tttggagaag gcagatgaaa ctcaagctag aaaacgactt 300  
 tctcctgata agatgaaaca ctcacctaata ttaagttttg agcctaactt ctgccaggat 360  
 aaccctcgaa gtcccaccag ctctaaagaa agcccccagg aggcacaaag gccacagtat 420  
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 ctatcctccc ttttcaaata ccacagctcc aaaaggatta gacctcgtgc ctgcaaaaac 540  
 cacaagagta aactggaatc tcaaaacaaa gttatgcagg aaaacagctc cagtttctca 600  
 gatctgtcag aaagacgaga aagatcttct gttcccatcc ctatccctgc ggataccagg 660  
 gataatgaag tgaatcacgc cctggaacag caggaagcca agaggcgtga agcggagcag 720  
 gctgccagtg aggcggctgg tggagacact acaccagggt cttcccttct atctctgtac 780  
 tatgaagaac ctctggggca acctccccgg ttactcaaa agttacggag cagagaagtt 840  
 ccagaaggaa ctcgagtaca gttggattgc atagtggtag gaattccacc acctcaagta 900  
 aggtgtgact gtgaaggcaa ggagcttgaa aattccccag atattcacat cgtccaggca 960  
 ggaaatctgc actcactgac cattgcggaa gcctttgaag aggacacagg acgctattcc 1020  
 tgctttgctt ctaacatcta tgggacagat tcgacttctg ctgagattta tatagaaggg 1080  
 gtttcttctt ctgactcaga aggcgacct aacaaggaag agatgaatcg aatccagaag 1140  
 ccaaagagg tgtcatctcc tcccactacc tctgcagtca ttcctccagc agtaccceaa 1200  
 gccagcatt tggtgcccca acctcgtgtg gcaaccatcc agcagtgtca gagccccacc 1260  
 aattacttgc agggattgga tggaaaacct atcattgcag ctctgtgtt tacaaagatg 1320  
 ctacaaaatt tgctagcttc tgagggtcag ctggttgtct ttgaatgcag agtaaaagga 1380  
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 gtcattgctg aggtgtttgc agaagattct ggggtgttca catgtactgc aagcaacaaa 1560  
 tacggcacag tgtcaagcat tgcacagctg cacgtgagag gaaatgagga cctcagcaac 1620  
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 <211> 570  
 <212> PRT  
 <213> homo sapiens

<400> 12  
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 Arg Glu Ser Tyr Leu Ala Glu Thr Arg His Arg Gly Asn Asn Glu Arg  
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 Ser Arg Ala Glu Pro Ser Ser Asn Pro Cys His Phe Gly Ser Pro Ser



|             |                             |                         |         |  |     |
|-------------|-----------------------------|-------------------------|---------|--|-----|
|             | 485                         |                         | 490     |  | 495 |
| Ile Cys Thr | Leu Val Ile Ala Glu         | Val Phe Ala Glu Asp Ser | Gly Cys |  |     |
|             | 500                         | 505                     | 510     |  |     |
| Phe Thr Cys | Thr Ala Ser Asn Lys         | Tyr Gly Thr Val Ser Ser | Ile Ala |  |     |
|             | 515                         | 520                     | 525     |  |     |
| Gln Leu His | Val Arg Gly Asn Glu Asp     | Leu Ser Asn Asn Gly Ser | Leu     |  |     |
|             | 530                         | 535                     | 540     |  |     |
| His Ser Ala | Asn Ser Thr Thr Asn Leu Ala | Ala Ile Tyr Pro Ile Ala |         |  |     |
| 545         | 550                         | 555                     | 560     |  |     |
| Pro Pro Leu | Pro Pro Leu Glu Pro Lys     | Lys                     |         |  |     |
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 <212> DNA  
 <213> homo sapiens

<400> 13

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| ttagctgaaa  | ccagacatcg | gggaaacaat | gagaggagtc  | gagcggagcc | ctcctccaac  | 120  |
| ccttgccatt  | tcggcagtc  | ttctggggcc | gctgaaggag  | gcggaggcca | agatgacctt  | 180  |
| ccagatcttt  | cagcctttct | gagccaagaa | gaattagacg  | aaagtgtcaa | tttggcaaga  | 240  |
| ctggccatca  | attacgaccc | tttggaaga  | gcagatgaaa  | ctcaagctag | aaaacgactt  | 300  |
| tctcctgac   | agatgaaaca | ctcaccta   | taaagtcttg  | agcctaactt | ctgccaggat  | 360  |
| aaccctcgaa  | gtcccaccag | ctctaaagaa | agccccagg   | aggcaaaaag | gccacagtat  | 420  |
| tgttctgaaa  | cccagtccaa | aaaagtattt | ttaaataagg  | ctgccgactt | cattgaagag  | 480  |
| ctatcctccc  | ttttcaaata | ccacagctcc | aaaaggatta  | gacctcgtgc | ctgcaaaaac  | 540  |
| cacaagagta  | aactggaatc | tcaaaacaaa | gttatgcagg  | aaaacagctc | cagtttctca  | 600  |
| gatctgtcag  | aaagacgaga | aagatcttct | gttcccatcc  | ctatccctgc | ggataaccagg | 660  |
| gataatgaag  | tgaatcacgc | cctggaacag | caggaagcca  | agaggcgtga | agcggagcag  | 720  |
| gctgccagtg  | aggcggctgg | tggagacact | acaccagggt  | cttccccctc | atctctgtac  | 780  |
| tatgaagaac  | ctctggggca | acctccccgg | ttcactcaaa  | agttacggag | cagagaagtt  | 840  |
| ccagaaggaa  | ctcgagtaca | gttggtatgc | atagtggtag  | gaattccacc | acctcaagta  | 900  |
| aggtggtact  | gtgaaggcaa | ggagcttgaa | aattccccag  | atattcacat | cgtccaggca  | 960  |
| ggaaatctgc  | actcactgac | cattgcggaa | gcctttgaag  | aggacacagg | acgctattcc  | 1020 |
| tgctttgctt  | ctaacatcta | tgggacagat | tcgacttctg  | ctgagattta | tatagaaggg  | 1080 |
| gtttcttctt  | ctgactcaga | aggcgacctt | aacaagggaag | agatgaatcg | aatccagaag  | 1140 |
| ccaaatgagg  | tgtcatctcc | tcccactacc | tctgcagtca  | ttcctccagc | agtaccccaa  | 1200 |
| gcccagcatt  | tggtggccca | acctcgtgtg | gcaaccatcc  | agcagtgtca | gagccccacc  | 1260 |
| aattacttgc  | agggttgga  | tggaaaacct | atcattgcag  | ctcctgtgtt | tacaaaagtg  | 1320 |
| ctacaaaatt  | tgtcagcttc | tgagggtcag | ctgggtgtct  | ttgaatgcag | agtaaaaagga | 1380 |
| gtccatctc   | ctaagggtga | gtggtataga | gaagggactt  | taatagaaga | ttctccagat  | 1440 |
| tttaggattt  | tacagaaaaa | acctcgatcc | atggcagagc  | cagaggagat | ttgcaccttg  | 1500 |
| gtcattgctg  | aggtgtttgc | agaagattct | gggtgcttca  | catgtactgc | aagcaacaaa  | 1560 |
| tacggcacag  | tgtcaagcat | tgcacagctg | cacgtgagag  | gaaatgagga | cctcagcaac  | 1620 |
| aacgggtctc  | ttcactcagc | caactcyacc | accaacctgg  | cagctattga | gccacagccc  | 1680 |
| tccccacccc  | actcagagcc | tccatctgtg | gaacaacccc  | ccaaacccaa | actcgagggg  | 1740 |
| gttctggtga  | accacaatga | gccccggtcc | agctccagga  | ttgggcttcg | tgtgcacttc  | 1800 |
| aacctgcctg  | aagatgacaa | aggaagtga  | gcctcctccg  | aggctggtgt | ggtgaccacc  | 1860 |
| agacagacca  | ggcccgattc | tttscaggag | aggttcaacg  | gacaggcaac | aaaaacccca  | 1920 |
| gagccttctt  | tccccgtgaa | agagccccct | ccagttctgg  | ccaaacccaa | acttgattcc  | 1980 |
| actcagttac  | aacagcttca | taaccaagtc | ttactggaac  | aacaccaatt | gcaaaaccca  | 2040 |
| cctccttcat  | ctcctaagga | gtttcctttc | arcagtactg  | ttttgaactc | caatgctccc  | 2100 |
| ccagcgggtga | caacatccar | taagcaggtg | aaggctcctt  | catcacagac | gttcagcttg  | 2160 |
| gcccggccga  | agtatttctt | ccccctccag | aacaccaccg  | cagcaactgt | ggcccccttc  | 2220 |
| agctctccgg  | tgttcacttt | gagcagcatt | ccccctcaaa  | cctaa      |             | 2265 |

<210> 14  
 <211> 754  
 <212> PRT  
 <213> homo sapiens

<220>  
 <221> VARIANT  
 <222> (1)...(754)  
 <223> Xaa = Any Amino Acid

<400> 14  
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 1 5 10 15  
 Arg Glu Ser Tyr Leu Ala Glu Thr Arg His Arg Gly Asn Asn Glu Arg  
 20 25 30  
 Ser Arg Ala Glu Pro Ser Ser Asn Pro Cys His Phe Gly Ser Pro Ser  
 35 40 45  
 Gly Ala Ala Glu Gly Gly Gly Gly Gln Asp Asp Leu Pro Asp Leu Ser  
 50 55 60  
 Ala Phe Leu Ser Gln Glu Glu Leu Asp Glu Ser Val Asn Leu Ala Arg  
 65 70 75 80  
 Leu Ala Ile Asn Tyr Asp Pro Leu Glu Lys Ala Asp Glu Thr Gln Ala  
 85 90 95  
 Arg Lys Arg Leu Ser Pro Asp Gln Met Lys His Ser Pro Asn Leu Ser  
 100 105 110  
 Phe Glu Pro Asn Phe Cys Gln Asp Asn Pro Arg Ser Pro Thr Ser Ser  
 115 120 125  
 Lys Glu Ser Pro Gln Glu Ala Lys Arg Pro Gln Tyr Cys Ser Glu Thr  
 130 135 140  
 Gln Ser Lys Lys Val Phe Leu Asn Lys Ala Ala Asp Phe Ile Glu Glu  
 145 150 155 160  
 Leu Ser Ser Leu Phe Lys Ser His Ser Ser Lys Arg Ile Arg Pro Arg  
 165 170 175  
 Ala Cys Lys Asn His Lys Ser Lys Leu Glu Ser Gln Asn Lys Val Met  
 180 185 190  
 Gln Glu Asn Ser Ser Ser Phe Ser Asp Leu Ser Glu Arg Arg Glu Arg  
 195 200 205  
 Ser Ser Val Pro Ile Pro Ile Pro Ala Asp Thr Arg Asp Asn Glu Val  
 210 215 220  
 Asn His Ala Leu Glu Gln Gln Glu Ala Lys Arg Arg Glu Ala Glu Gln  
 225 230 235 240  
 Ala Ala Ser Glu Ala Ala Gly Gly Asp Thr Thr Pro Gly Ser Ser Pro  
 245 250 255  
 Ser Ser Leu Tyr Tyr Glu Glu Pro Leu Gly Gln Pro Pro Arg Phe Thr  
 260 265 270  
 Gln Lys Leu Arg Ser Arg Glu Val Pro Glu Gly Thr Arg Val Gln Leu  
 275 280 285  
 Asp Cys Ile Val Val Gly Ile Pro Pro Pro Gln Val Arg Trp Tyr Cys  
 290 295 300  
 Glu Gly Lys Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala  
 305 310 315 320  
 Gly Asn Leu His Ser Leu Thr Ile Ala Glu Ala Phe Glu Glu Asp Thr  
 325 330 335  
 Gly Arg Tyr Ser Cys Phe Ala Ser Asn Ile Tyr Gly Thr Asp Ser Thr  
 340 345 350  
 Ser Ala Glu Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly

|   |     |     |
|---|-----|-----|
| 355   | 360 | 365 |
| Asp Pro Asn Lys Glu Glu Met Asn Arg Ile Gln Lys Pro Asn Glu Val |     |     |
| 370   | 375 | 380 |
| Ser Ser Pro Pro Thr Thr Ser Ala Val Ile Pro Pro Ala Val Pro Gln |     |     |
| 385   | 390 | 395 |
| Ala Gln His Leu Val Ala Gln Pro Arg Val Ala Thr Ile Gln Gln Cys |     | 400 |
| 405   | 410 | 415 |
| Gln Ser Pro Thr Asn Tyr Leu Gln Gly Leu Asp Gly Lys Pro Ile Ile |     |     |
| 420   | 425 | 430 |
| Ala Ala Pro Val Phe Thr Lys Met Leu Gln Asn Leu Ser Ala Ser Glu |     |     |
| 435   | 440 | 445 |
| Gly Gln Leu Val Val Phe Glu Cys Arg Val Lys Gly Ala Pro Ser Pro |     |     |
| 450   | 455 | 460 |
| Lys Val Glu Trp Tyr Arg Glu Gly Thr Leu Ile Glu Asp Ser Pro Asp |     |     |
| 465   | 470 | 475 |
| Phe Arg Ile Leu Gln Lys Lys Pro Arg Ser Met Ala Glu Pro Glu Glu |     |     |
| 485   | 490 | 495 |
| Ile Cys Thr Leu Val Ile Ala Glu Val Phe Ala Glu Asp Ser Gly Cys |     |     |
| 500   | 505 | 510 |
| Phe Thr Cys Thr Ala Ser Asn Lys Tyr Gly Thr Val Ser Ser Ile Ala |     |     |
| 515   | 520 | 525 |
| Gln Leu His Val Arg Gly Asn Glu Asp Leu Ser Asn Asn Gly Ser Leu |     |     |
| 530   | 535 | 540 |
| His Ser Ala Asn Ser Thr Thr Asn Leu Ala Ala Ile Glu Pro Gln Pro |     |     |
| 545   | 550 | 555 |
| Ser Pro Pro His Ser Glu Pro Pro Ser Val Glu Gln Pro Pro Lys Pro |     |     |
| 565   | 570 | 575 |
| Lys Leu Glu Gly Val Leu Val Asn His Asn Glu Pro Arg Ser Ser Ser |     |     |
| 580   | 585 | 590 |
| Arg Ile Gly Leu Arg Val His Phe Asn Leu Pro Glu Asp Asp Lys Gly |     |     |
| 595   | 600 | 605 |
| Ser Glu Ala Ser Ser Glu Ala Gly Val Val Thr Thr Arg Gln Thr Arg |     |     |
| 610   | 615 | 620 |
| Pro Asp Ser Xaa Gln Glu Arg Phe Asn Gly Gln Ala Thr Lys Thr Pro |     |     |
| 625   | 630 | 635 |
| Glu Pro Ser Phe Pro Val Lys Glu Pro Pro Pro Val Leu Ala Lys Pro |     |     |
| 645   | 650 | 655 |
| Lys Leu Asp Ser Thr Gln Leu Gln Gln Leu His Asn Gln Val Leu Leu |     |     |
| 660   | 665 | 670 |
| Glu Gln His Gln Leu Gln Asn Pro Pro Pro Ser Ser Pro Lys Glu Phe |     |     |
| 675   | 680 | 685 |
| Pro Phe Xaa Met Thr Val Leu Asn Ser Asn Ala Pro Pro Ala Val Thr |     |     |
| 690   | 695 | 700 |
| Thr Ser Xaa Lys Gln Val Lys Ala Pro Ser Ser Gln Thr Phe Ser Leu |     |     |
| 705   | 710 | 715 |
| Ala Arg Pro Lys Tyr Phe Phe Pro Ser Thr Asn Thr Thr Ala Ala Thr |     |     |
| 725   | 730 | 735 |
| Val Ala Pro Ser Ser Ser Pro Val Phe Thr Leu Ser Ser Ile Pro Pro |     |     |
| 740   | 745 | 750 |
| Gln Thr   |     |     |

<210> 15

<211> 3138

<212> DNA

<213> homo sapiens



<400> 15

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| atgcttaccg  | tccaagtga   | gacttcctct  | gccatagaac  | ttccagattc  | cttggcattc  | 60   |
| ctgtggatca  | tcccaatgtg  | gtactgtgaa  | ggcaaggagc  | ttgaaaattc  | cccagatatt  | 120  |
| cacatcgctc  | aggcaggaaa  | tctgcaactc  | ctgaccattg  | cggaagcctt  | tgaagaggac  | 180  |
| acaggacgct  | attcctgctt  | tgcttctaac  | atctatggga  | cagattcgac  | ttctgctgag  | 240  |
| atztatatag  | aaggggtttc  | ttcttctgac  | tcagaaggcg  | accctaacaa  | ggaagagatg  | 300  |
| aatcgaatcc  | agaagccaaa  | tgaggtgtca  | tctcctccca  | ctacctctgc  | agtcattcct  | 360  |
| ccagcagtag  | cccaagccca  | gcatttgggtg | gcccacctc   | gtgtggcaac  | catccagcag  | 420  |
| tgtcagagcc  | ccaccaatta  | cttgcaggga  | ttggatggaa  | aacctatcat  | tgcagctcct  | 480  |
| gtgtttacaa  | agatgctaca  | aaatttgtca  | gcttctgagg  | gtcagctggg  | tgtctttgaa  | 540  |
| tgcagagtaa  | aaggagctcc  | atctcctaag  | gttgagtggg  | atagagaagg  | gactttaata  | 600  |
| gaagattctc  | cagatttttag | gattttacag  | aaaaaacctc  | gatccatggc  | agagccagag  | 660  |
| gagatttgca  | ccttgggtcat | tgctgagggtg | tttgacagaag | attctgggtg  | cttcacatgt  | 720  |
| actgcaagca  | acaaatacgg  | cacagtgtca  | agcattgcac  | agctgcacgt  | gagaggaaat  | 780  |
| gaggacctca  | gcaacaacgg  | gtctcttcac  | tcagccaact  | cyaccaccaa  | cctggcagct  | 840  |
| attgagccac  | agccctcccc  | acccactca   | gagcctccat  | ctgtggaaca  | acccccaaa   | 900  |
| cccaaaactcg | aggggggttct | ggtgaaccac  | aatgagcccc  | ggtccagctc  | caggattggg  | 960  |
| cttcgtgtgc  | acttcaacct  | gcctgaagat  | gacaaaggaa  | gtgaagcatc  | ctccgaggct  | 1020 |
| ggtgtggtga  | ccaccagaca  | gaccaggccc  | gattctttsc  | aggagagggt  | caacggacag  | 1080 |
| gcaacaaaaa  | ccccagagcc  | ttctttcccc  | gtgaaagagc  | ccctccagt   | tctggccaaa  | 1140 |
| cccaaaacttg | attccactca  | gttacaacag  | cttcataacc  | aagtcttact  | ggaacaacac  | 1200 |
| caattgcaaa  | acccacctcc  | ttcatctcct  | aaggagtttc  | ctttcarcat  | gactgttttg  | 1260 |
| aactccaatg  | ctcccccagc  | ggtgacaaca  | tccartaagc  | aggatgaaggc | tccttcatca  | 1320 |
| cagacgttca  | gcttggcccc  | gccgaagtat  | ttcttccctc  | ccacgaacac  | caccgcagca  | 1380 |
| actgtggccc  | cttcagctc   | tccggtgttc  | actttgagca  | gcactcctca  | aactattcag  | 1440 |
| aggacagtga  | gcaaagaaa   | cctcttagtg  | tctacccctc  | ctgtgcaaac  | caaattctcca | 1500 |
| ggaggggttt  | ccatccaaaa  | tgagccactc  | ccaccaggcc  | caacagaacc  | racaccacca  | 1560 |
| ccattcacat  | tttccatccc  | cagcggaaac  | cagtttcagc  | cccgctgtgt  | gtccccaaat  | 1620 |
| cctgtctctc  | ctaccagccg  | gattcagaac  | ccagtggctt  | tcctcagctc  | tgttctgcct  | 1680 |
| tctctccctg  | ccatcccacc  | cacaaaatgcc | atggrgctgc  | ctagaagtgc  | accatccatg  | 1740 |
| ccatcccagg  | gattagcgaa  | gaaaaataca  | aagtctcctc  | aaccagtga   | tgatgataac  | 1800 |
| attcgtgaaa  | ctaagaacgc  | agtgattcga  | gacttgggga  | aaaaaataac  | tttcagtgat  | 1860 |
| gtcagaccaa  | accagcagga  | gtacaaaatt  | tcaagctttg  | agcagaggct  | gatgaatgaa  | 1920 |
| atagagtttc  | gcttggaaacg | tactcctgtt  | gatgaatcag  | atgatgaaat  | tcaacatgat  | 1980 |
| gagatcccca  | cgggcaagtg  | tattgctccc  | atctttgaca  | agagactcaa  | gcacttccgg  | 2040 |
| gtcacagaag  | gctctccagt  | cacattcacc  | tgcaaaaattg | ttgggatacc  | tgttccaaaag | 2100 |
| gtttactggg  | tcaaagatgg  | gaagcagatt  | tctaagagaa  | atgagcactg  | caaaatgagg  | 2160 |
| cgagaaggag  | atgggacatg  | ctctctgcac  | attgaatcca  | ctaccagtga  | tgacgatggc  | 2220 |
| aactacacca  | tcatggcagc  | caacccccag  | gggagaatca  | gctgttcttg  | ccacttgatg  | 2280 |
| gtacaaaagt  | tgcccattcg  | cagtcggcta  | acctctgctg  | gtcagtctca  | caggggaaga  | 2340 |
| tcccagagtgc | aagaaagaga  | caaagagccc  | ctacaggaac  | gctttttccg  | accacatttc  | 2400 |
| ctgcaggctc  | ctggggatat  | ggtagctcat  | gaggggcgcc  | tctgtcggct  | ggactgtaag  | 2460 |
| gtgagtgggt  | taccgcccc   | ggagctgaca  | tggctactca  | atggccaacc  | tgtgtacca   | 2520 |
| gatgcctccc  | acaagatgct  | ggtcagggag  | accggagtcc  | actctctgct  | cattgacca   | 2580 |
| ctcactcagc  | gcgacgcagg  | gacctataag  | tgcatcgcta  | ccaacaaaa   | cgggcagaat  | 2640 |
| tcttttagtc  | tggagctctc  | tgtagtagcc  | aaagagggtga | agaaagcacc  | tgtgatcctg  | 2700 |
| gagaaaactac | agaactgcgg  | tgttccccga  | ggccaccccg  | tgagactgga  | gtgccgcgtg  | 2760 |
| ataggcatgc  | ccccacctgt  | gttctactgg  | aagaaagaca  | atgagaccat  | cccttgacc   | 2820 |
| agagagagga  | tcagtatgca  | ccaggacaca  | acagggtatg  | cctgccttct  | cattcagcca  | 2880 |
| gccaagaaat  | cagacgctgg  | atggtacacg  | ttgtcagcca  | agaatgaagc  | cggcatcgtg  | 2940 |
| tcgtgcactg  | ccaggctgga  | tatatacgtc  | cagtggcacc  | atcagatccc  | accgcccag   | 3000 |
| tctgtccggc  | ccagtggcag  | tcgctacgga  | tctctacca   | gtaaaggact  | tgacatattt  | 3060 |
| tctgcctttt  | cctccatgga  | aagcacgatg  | gtgtattcat  | gctcttctcg  | gagtgtagt   | 3120 |
| gagagtgatg  | aacttta     |             |             |             |             | 3138 |

<210> 16

<211> 1045  
 <212> PRT  
 <213> homo sapiens

<220>  
 <221> VARIANT  
 <222> (1)...(1045)  
 <223> Xaa = Any Amino Acid

<400> 16  
 Met Leu Thr Val Gln Val Lys Thr Ser Ser Ala Ile Glu Leu Pro Asp  
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 Ser Leu Ala Phe Leu Trp Ile Ile Pro Met Trp Tyr Cys Glu Gly Lys  
 20 25 30  
 Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala Gly Asn Leu  
 35 40 45  
 His Ser Leu Thr Ile Ala Glu Ala Phe Glu Glu Asp Thr Gly Arg Tyr  
 50 55 60  
 Ser Cys Phe Ala Ser Asn Ile Tyr Gly Thr Asp Ser Thr Ser Ala Glu  
 65 70 75 80  
 Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly Asp Pro Asn  
 85 90 95  
 Lys Glu Glu Met Asn Arg Ile Gln Lys Pro Asn Glu Val Ser Ser Pro  
 100 105 110  
 Pro Thr Thr Ser Ala Val Ile Pro Pro Ala Val Pro Gln Ala Gln His  
 115 120 125  
 Leu Val Ala Gln Pro Arg Val Ala Thr Ile Gln Gln Cys Gln Ser Pro  
 130 135 140  
 Thr Asn Tyr Leu Gln Gly Leu Asp Gly Lys Pro Ile Ile Ala Ala Pro  
 145 150 155 160  
 Val Phe Thr Lys Met Leu Gln Asn Leu Ser Ala Ser Glu Gly Gln Leu  
 165 170 175  
 Val Val Phe Glu Cys Arg Val Lys Gly Ala Pro Ser Pro Lys Val Glu  
 180 185 190  
 Trp Tyr Arg Glu Gly Thr Leu Ile Glu Asp Ser Pro Asp Phe Arg Ile  
 195 200 205  
 Leu Gln Lys Lys Pro Arg Ser Met Ala Glu Pro Glu Glu Ile Cys Thr  
 210 215 220  
 Leu Val Ile Ala Glu Val Phe Ala Glu Asp Ser Gly Cys Phe Thr Cys  
 225 230 235 240  
 Thr Ala Ser Asn Lys Tyr Gly Thr Val Ser Ser Ile Ala Gln Leu His  
 245 250 255  
 Val Arg Gly Asn Glu Asp Leu Ser Asn Asn Gly Ser Leu His Ser Ala  
 260 265 270  
 Asn Ser Thr Thr Asn Leu Ala Ala Ile Glu Pro Gln Pro Ser Pro Pro  
 275 280 285  
 His Ser Glu Pro Pro Ser Val Glu Gln Pro Pro Lys Pro Lys Leu Glu  
 290 295 300  
 Gly Val Leu Val Asn His Asn Glu Pro Arg Ser Ser Ser Arg Ile Gly  
 305 310 315 320  
 Leu Arg Val His Phe Asn Leu Pro Glu Asp Asp Lys Gly Ser Glu Ala  
 325 330 335  
 Ser Ser Glu Ala Gly Val Val Thr Thr Arg Gln Thr Arg Pro Asp Ser  
 340 345 350  
 Xaa Gln Glu Arg Phe Asn Gly Gln Ala Thr Lys Thr Pro Glu Pro Ser  
 355 360 365

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Pro | Val | Lys | Glu | Pro | Pro | Pro | Val | Leu | Ala | Lys | Pro | Lys | Leu | Asp | 370 | 375 | 380 |
| Ser | Thr | Gln | Leu | Gln | Gln | Leu | His | Asn | Gln | Val | Leu | Leu | Glu | Gln | His | 385 | 390 | 395 |
| Gln | Leu | Gln | Asn | Pro | Pro | Pro | Ser | Ser | Pro | Lys | Glu | Phe | Pro | Phe | Xaa | 405 | 410 | 415 |
| Met | Thr | Val | Leu | Asn | Ser | Asn | Ala | Pro | Pro | Ala | Val | Thr | Thr | Ser | Xaa | 420 | 425 | 430 |
| Lys | Gln | Val | Lys | Ala | Pro | Ser | Ser | Gln | Thr | Phe | Ser | Leu | Ala | Arg | Pro | 435 | 440 | 445 |
| Lys | Tyr | Phe | Phe | Pro | Ser | Thr | Asn | Thr | Thr | Ala | Ala | Thr | Val | Ala | Pro | 450 | 455 | 460 |
| Ser | Ser | Ser | Pro | Val | Phe | Thr | Leu | Ser | Ser | Thr | Pro | Gln | Thr | Ile | Gln | 465 | 470 | 475 |
| Arg | Thr | Val | Ser | Lys | Glu | Ser | Leu | Leu | Val | Ser | His | Pro | Ser | Val | Gln | 485 | 490 | 495 |
| Thr | Lys | Ser | Pro | Gly | Gly | Leu | Ser | Ile | Gln | Asn | Glu | Pro | Leu | Pro | Pro | 500 | 505 | 510 |
| Gly | Pro | Thr | Glu | Pro | Thr | Pro | Pro | Pro | Phe | Thr | Phe | Ser | Ile | Pro | Ser | 515 | 520 | 525 |
| Gly | Asn | Gln | Phe | Gln | Pro | Arg | Cys | Val | Ser | Pro | Ile | Pro | Val | Ser | Pro | 530 | 535 | 540 |
| Thr | Ser | Arg | Ile | Gln | Asn | Pro | Val | Ala | Phe | Leu | Ser | Ser | Val | Leu | Pro | 545 | 550 | 555 |
| Ser | Leu | Pro | Ala | Ile | Pro | Pro | Thr | Asn | Ala | Met | Xaa | Leu | Pro | Arg | Ser | 565 | 570 | 575 |
| Ala | Pro | Ser | Met | Pro | Ser | Gln | Gly | Leu | Ala | Lys | Lys | Asn | Thr | Lys | Ser | 580 | 585 | 590 |
| Pro | Gln | Pro | Val | Asn | Asp | Asp | Asn | Ile | Arg | Glu | Thr | Lys | Asn | Ala | Val | 595 | 600 | 605 |
| Ile | Arg | Asp | Leu | Gly | Lys | Lys | Ile | Thr | Phe | Ser | Asp | Val | Arg | Pro | Asn | 610 | 615 | 620 |
| Gln | Gln | Glu | Tyr | Lys | Ile | Ser | Ser | Phe | Glu | Gln | Arg | Leu | Met | Asn | Glu | 625 | 630 | 635 |
| Ile | Glu | Phe | Arg | Leu | Glu | Arg | Thr | Pro | Val | Asp | Glu | Ser | Asp | Asp | Glu | 645 | 650 | 655 |
| Ile | Gln | His | Asp | Glu | Ile | Pro | Thr | Gly | Lys | Cys | Ile | Ala | Pro | Ile | Phe | 660 | 665 | 670 |
| Asp | Lys | Arg | Leu | Lys | His | Phe | Arg | Val | Thr | Glu | Gly | Ser | Pro | Val | Thr | 675 | 680 | 685 |
| Phe | Thr | Cys | Lys | Ile | Val | Gly | Ile | Pro | Val | Pro | Lys | Val | Tyr | Trp | Phe | 690 | 695 | 700 |
| Lys | Asp | Gly | Lys | Gln | Ile | Ser | Lys | Arg | Asn | Glu | His | Cys | Lys | Met | Arg | 705 | 710 | 715 |
| Arg | Glu | Gly | Asp | Gly | Thr | Cys | Ser | Leu | His | Ile | Glu | Ser | Thr | Thr | Ser | 725 | 730 | 735 |
| Asp | Asp | Asp | Gly | Asn | Tyr | Thr | Ile | Met | Ala | Ala | Asn | Pro | Gln | Gly | Arg | 740 | 745 | 750 |
| Ile | Ser | Cys | Ser | Gly | His | Leu | Met | Val | Gln | Ser | Leu | Pro | Ile | Arg | Ser | 755 | 760 | 765 |
| Arg | Leu | Thr | Ser | Ala | Gly | Gln | Ser | His | Arg | Gly | Arg | Ser | Arg | Val | Gln | 770 | 775 | 780 |
| Glu | Arg | Asp | Lys | Glu | Pro | Leu | Gln | Glu | Arg | Phe | Phe | Arg | Pro | His | Phe | 785 | 790 | 795 |
| Leu | Gln | Ala | Pro | Gly | Asp | Met | Val | Ala | His | Glu | Gly | Arg | Leu | Cys | Arg | 805 | 810 | 815 |

Leu Asp Cys Lys Val Ser Gly Leu Pro Pro Glu Leu Thr Trp Leu  
 820 825 830  
 Leu Asn Gly Gln Pro Val Leu Pro Asp Ala Ser His Lys Met Leu Val  
 835 840 845  
 Arg Glu Thr Gly Val His Ser Leu Leu Ile Asp Pro Leu Thr Gln Arg  
 850 855 860  
 Asp Ala Gly Thr Tyr Lys Cys Ile Ala Thr Asn Lys Thr Gly Gln Asn  
 865 870 875 880  
 Ser Phe Ser Leu Glu Leu Ser Val Val Ala Lys Glu Val Lys Lys Ala  
 885 890 895  
 Pro Val Ile Leu Glu Lys Leu Gln Asn Cys Gly Val Pro Glu Gly His  
 900 905 910  
 Pro Val Arg Leu Glu Cys Arg Val Ile Gly Met Pro Pro Pro Val Phe  
 915 920 925  
 Tyr Trp Lys Lys Asp Asn Glu Thr Ile Pro Cys Thr Arg Glu Arg Ile  
 930 935 940  
 Ser Met His Gln Asp Thr Thr Gly Tyr Ala Cys Leu Leu Ile Gln Pro  
 945 950 955 960  
 Ala Lys Lys Ser Asp Ala Gly Trp Tyr Thr Leu Ser Ala Lys Asn Glu  
 965 970 975  
 Ala Gly Ile Val Ser Cys Thr Ala Arg Leu Asp Ile Tyr Ala Gln Trp  
 980 985 990  
 His His Gln Ile Pro Pro Pro Met Ser Val Arg Pro Ser Gly Ser Arg  
 995 1000 1005  
 Tyr Gly Ser Leu Thr Ser Lys Gly Leu Asp Ile Phe Ser Ala Phe Ser  
 1010 1015 1020  
 Ser Met Glu Ser Thr Met Val Tyr Ser Cys Ser Ser Arg Ser Val Val  
 1025 1030 1035 1040  
 Glu Ser Asp Glu Leu  
 1045

<210> 17  
 <211> 309  
 <212> DNA  
 <213> homo sapiens

<400> 17  
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 ctgtgggatca tccaatgtg gtactgtgaa ggcaaggagc ttgaaaattc cccagatatt 120  
 cacatcgtcc aggaggaaa tctgcactca ctgaccattg cggaagcctt tgaagaggac 180  
 acaggacgct attcctgctt tgcttctaac atctatggga cagattcgac ttctgctgag 240  
 atttatatag aaggggtttc ttcttctgac tcagaaggcg accctaacaa ggaagagatg 300  
 aatcggttaa 309

<210> 18  
 <211> 102  
 <212> PRT  
 <213> homo sapiens

<400> 18  
 Met Leu Thr Val Gln Val Lys Thr Ser Ser Ala Ile Glu Leu Pro Asp  
 1 5 10 15  
 Ser Leu Ala Phe Leu Trp Ile Ile Pro Met Trp Tyr Cys Glu Gly Lys  
 20 25 30  
 Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala Gly Asn Leu  
 35 40 45

His Ser Leu Thr Ile Ala Glu Ala Phe Glu Glu Asp Thr Gly Arg Tyr  
 50 55 60  
 Ser Cys Phe Ala Ser Asn Ile Tyr Gly Thr Asp Ser Thr Ser Ala Glu  
 65 70 75 80  
 Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly Asp Pro Asn  
 85 90 95  
 Lys Glu Glu Met Asn Arg  
 100

<210> 19  
 <211> 435  
 <212> DNA  
 <213> homo sapiens

<400> 19  
 atgcttaccg tccaagtga gacttcctct gccatagaac ttccagattc cttggcattc 60  
 ctgtggatca tcccaatgtg gtactgtgaa ggcaaggagc ttgaaaattc cccagatatt 120  
 cacatcgctc aggaggaaa tctgcactca ctgaccattg cggaagcctt tgaagaggac 180  
 acaggacgct attcctgctt tgcttctaac atctatggga cagattcgac ttctgctgag 240  
 atttatatag aaggggtttc ttcttctgac tcagaaggcg accctaacaa ggaagagatg 300  
 aatcgtgtca gagccccacc aattacttgc agggattgga tggaaaacct atcattgcag 360  
 ctcctgtgtt tacaaaagatg ctacaaaatt tgtcagcttc tgagggtcag ctggttgtct 420  
 ttgaatgcag agtaa 435

<210> 20  
 <211> 144  
 <212> PRT  
 <213> homo sapiens

<400> 20  
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 1 5 10 15  
 Ser Leu Ala Phe Leu Trp Ile Ile Pro Met Trp Tyr Cys Glu Gly Lys  
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 Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala Gly Asn Leu  
 35 40 45  
 His Ser Leu Thr Ile Ala Glu Ala Phe Glu Glu Asp Thr Gly Arg Tyr  
 50 55 60  
 Ser Cys Phe Ala Ser Asn Ile Tyr Gly Thr Asp Ser Thr Ser Ala Glu  
 65 70 75 80  
 Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly Asp Pro Asn  
 85 90 95  
 Lys Glu Glu Met Asn Arg Val Arg Ala Pro Pro Ile Thr Cys Arg Asp  
 100 105 110  
 Trp Met Glu Asn Leu Ser Leu Gln Leu Leu Cys Leu Gln Arg Cys Tyr  
 115 120 125  
 Lys Ile Cys Gln Leu Leu Arg Val Ser Trp Leu Ser Leu Asn Ala Glu  
 130 135 140

<210> 21  
 <211> 381  
 <212> DNA  
 <213> homo sapiens

<400> 21  
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|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ctgtggatca | tccaatgtg  | gtactgtgaa | ggcaaggagc | ttgaaaattc | cccagatatt | 120 |
| cacatcgtcc | aggcaggaaa | tctgcactca | ctgaccattg | cggaagcctt | tgaagaggac | 180 |
| acaggacgct | attcctgctt | tgcttctaac | atctatggga | cagattcgac | ttctgctgag | 240 |
| atztatatag | aaggggtttc | ttcttctgac | tcagaaggcg | accctaacaa | ggaagagatg | 300 |
| aatcgtgtca | gagccccacc | aattacttgc | agggattgga | tgaaaaacct | atcattgcag | 360 |
| ctcctgtgtt | tacaaaggta | a          |            |            |            | 381 |

<210> 22

<211> 126

<212> PRT

<213> homo sapiens

<400> 22

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Thr | Val | Gln | Val | Lys | Thr | Ser | Ser | Ala | Ile | Glu | Leu | Pro | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Leu | Ala | Phe | Leu | Trp | Ile | Ile | Pro | Met | Trp | Tyr | Cys | Glu | Gly | Lys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Leu | Glu | Asn | Ser | Pro | Asp | Ile | His | Ile | Val | Gln | Ala | Gly | Asn | Leu |
|     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| His | Ser | Leu | Thr | Ile | Ala | Glu | Ala | Phe | Glu | Glu | Asp | Thr | Gly | Arg | Tyr |
|     |     |     | 50  |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Cys | Phe | Ala | Ser | Asn | Ile | Tyr | Gly | Thr | Asp | Ser | Thr | Ser | Ala | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Ile | Tyr | Ile | Glu | Gly | Val | Ser | Ser | Ser | Asp | Ser | Glu | Gly | Asp | Pro | Asn |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Lys | Glu | Glu | Met | Asn | Arg | Val | Arg | Ala | Pro | Pro | Ile | Thr | Cys | Arg | Asp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Trp | Met | Glu | Asn | Leu | Ser | Leu | Gln | Leu | Leu | Cys | Leu | Gln | Arg |     |     |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

<210> 23

<211> 555

<212> DNA

<213> homo sapiens

<400> 23

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| atgcttaccg  | tccaagtga  | gacttcctct | gccatagaac | ttccagattc | cttggcattc | 60  |
| ctgtggatca  | tccaatgtg  | gtactgtgaa | ggcaaggagc | ttgaaaattc | cccagatatt | 120 |
| cacatcgtcc  | aggcaggaaa | tctgcactca | ctgaccattg | cggaagcctt | tgaagaggac | 180 |
| acaggacgct  | attcctgctt | tgcttctaac | atctatggga | cagattcgac | ttctgctgag | 240 |
| atztatatag  | aaggggtttc | ttcttctgac | tcagaaggcg | accctaacaa | ggaagagatg | 300 |
| aatcgaatcc  | agaagccaaa | tgaggtgtca | tctcctccca | ctacctctgc | agtcattcct | 360 |
| ccagcagtac  | ccaagccca  | gcatttggtg | gccaacctc  | gtgtggcaac | catccagcag | 420 |
| tgctcagagcc | ccaccaatta | cttgaggga  | ttggatggaa | aacctatcat | tgcagctcct | 480 |
| gtgttttaca  | aggtaataaa | aatattactt | ctttctgtca | tggttttaaa | gataccacag | 540 |
| cacccaaagt  | tatag      |            |            |            |            | 555 |

<210> 24

<211> 184

<212> PRT

<213> homo sapiens

<400> 24

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Thr | Val | Gln | Val | Lys | Thr | Ser | Ser | Ala | Ile | Glu | Leu | Pro | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Leu | Ala | Phe | Leu | Trp | Ile | Ile | Pro | Met | Trp | Tyr | Cys | Glu | Gly | Lys |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     | 20  |     | 25  |     | 30  |     |     |     |     |     |     |     |     |     |     |
| Glu | Leu | Glu | Asn | Ser | Pro | Asp | Ile | His | Ile | Val | Gln | Ala | Gly | Asn | Leu |
|     | 35  |     | 40  |     |     |     |     |     |     |     | 45  |     |     |     |     |
| His | Ser | Leu | Thr | Ile | Ala | Glu | Ala | Phe | Glu | Glu | Asp | Thr | Gly | Arg | Tyr |
|     | 50  |     |     |     | 55  |     |     |     |     |     | 60  |     |     |     |     |
| Ser | Cys | Phe | Ala | Ser | Asn | Ile | Tyr | Gly | Thr | Asp | Ser | Thr | Ser | Ala | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Ile | Tyr | Ile | Glu | Gly | Val | Ser | Ser | Ser | Asp | Ser | Glu | Gly | Asp | Pro | Asn |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     | 95  |     |     |
| Lys | Glu | Glu | Met | Asn | Arg | Ile | Gln | Lys | Pro | Asn | Glu | Val | Ser | Ser | Pro |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Thr | Thr | Ser | Ala | Val | Ile | Pro | Pro | Ala | Val | Pro | Gln | Ala | Gln | His |
|     |     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |
| Leu | Val | Ala | Gln | Pro | Arg | Val | Ala | Thr | Ile | Gln | Gln | Cys | Gln | Ser | Pro |
|     |     |     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |
| Thr | Asn | Tyr | Leu | Gln | Gly | Leu | Asp | Gly | Lys | Pro | Ile | Ile | Ala | Ala | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Val | Phe | Thr | Lys | Val | Ile | Lys | Ile | Leu | Leu | Leu | Ser | Val | Met | Ala | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Lys | Ile | Pro | Gln | His | Pro | Lys | Leu |     |     |     |     |     |     |     |     |
|     |     |     | 180 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 25  
 <211> 886  
 <212> DNA  
 <213> homo sapiens

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|------------|--------------------------------|------------|------------|-----|
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| atgcttaccg | tccaagtgaagacttcctctgccatagaac | ttccagattc | cttggcattc | 60  |
| ctgtggatca | tccaatgtgtactgtgaa             | ggcaaggagc | ttgaaaattc | 120 |
| cacatcgtcc | aggcaggaaa                     | tctgcactca | ctgaccattg | 180 |
| acaggacgct | attcctgctt                     | tgcttctaac | atctatggga | 240 |
| atttatatag | aaggggtttc                     | ttcttctgac | tcagaaggcg | 300 |
| aatcgaatcc | agaagccaaa                     | tgaggtgtca | tctcctccca | 360 |
| ccagcagtac | cccaagccca                     | gcatttggtg | gccaacctc  | 420 |
| tgtcagagcc | ccaccaatta                     | cttgcaggga | ttggatggaa | 480 |
| gtgtttacaa | agatgctaca                     | aaatttgtca | gcttctgagg | 540 |
| tgcagagtaa | aaggagctcc                     | atctcctaag | gttgagtggg | 600 |
| gaagattctc | cagatttttag                    | gattttacag | aaaaaacctc | 660 |
| gagatttgca | ccttgggtcat                    | tgctgaggtg | tttgagaag  | 720 |
| actgcaagca | acaaatacgg                     | cacagtgtca | agcattgcac | 780 |
| gaggacctca | gcaacaacgg                     | gtctcttcac | tcagccaact | 840 |
| atttacccta | tagcaccccc                     | tctaccccct | ctagagccaa | 886 |
|            |                                |            | aaaaaa     |     |

<210> 26  
 <211> 295  
 <212> PRT  
 <213> homo sapiens

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 26 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met      | Leu | Thr | Val | Gln | Val | Lys | Thr | Ser | Ser | Ala | Ile | Glu | Leu | Pro | Asp |
| 1        |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser      | Leu | Ala | Phe | Leu | Trp | Ile | Ile | Pro | Met | Trp | Tyr | Cys | Glu | Gly | Lys |
|          |     |     | 20  |     |     |     |     | 25  |     |     |     | 30  |     |     |     |
| Glu      | Leu | Glu | Asn | Ser | Pro | Asp | Ile | His | Ile | Val | Gln | Ala | Gly | Asn | Leu |
|          |     |     | 35  |     |     |     |     | 40  |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Leu | Thr | Ile | Ala | Glu | Ala | Phe | Glu | Glu | Asp | Thr | Gly | Arg | Tyr |
| 50  |     |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Cys | Phe | Ala | Ser | Asn | Ile | Tyr | Gly | Thr | Asp | Ser | Thr | Ser | Ala | Glu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Ile | Tyr | Ile | Glu | Gly | Val | Ser | Ser | Ser | Asp | Ser | Glu | Gly | Asp | Pro | Asn |
|     |     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Lys | Glu | Glu | Met | Asn | Arg | Ile | Gln | Lys | Pro | Asn | Glu | Val | Ser | Ser | Pro |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Thr | Thr | Ser | Ala | Val | Ile | Pro | Pro | Ala | Val | Pro | Gln | Ala | Gln | His |
|     |     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |
| Leu | Val | Ala | Gln | Pro | Arg | Val | Ala | Thr | Ile | Gln | Gln | Cys | Gln | Ser | Pro |
|     |     |     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |
| Thr | Asn | Tyr | Leu | Gln | Gly | Leu | Asp | Gly | Lys | Pro | Ile | Ile | Ala | Ala | Pro |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Val | Phe | Thr | Lys | Met | Leu | Gln | Asn | Leu | Ser | Ala | Ser | Glu | Gly | Gln | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |
| Val | Val | Phe | Glu | Cys | Arg | Val | Lys | Gly | Ala | Pro | Ser | Pro | Lys | Val | Glu |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Trp | Tyr | Arg | Glu | Gly | Thr | Leu | Ile | Glu | Asp | Ser | Pro | Asp | Phe | Arg | Ile |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |
| Leu | Gln | Lys | Lys | Pro | Arg | Ser | Met | Ala | Glu | Pro | Glu | Glu | Ile | Cys | Thr |
|     |     |     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |
| Leu | Val | Ile | Ala | Glu | Val | Phe | Ala | Glu | Asp | Ser | Gly | Cys | Phe | Thr | Cys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Thr | Ala | Ser | Asn | Lys | Tyr | Gly | Thr | Val | Ser | Ser | Ile | Ala | Gln | Leu | His |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Val | Arg | Gly | Asn | Glu | Asp | Leu | Ser | Asn | Asn | Gly | Ser | Leu | His | Ser | Ala |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asn | Ser | Thr | Thr | Asn | Leu | Ala | Ala | Ile | Tyr | Pro | Ile | Ala | Pro | Pro | Leu |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |
| Pro | Pro | Leu | Glu | Pro | Lys | Lys |     |     |     |     |     |     |     |     |     |
|     |     |     | 290 |     |     | 295 |     |     |     |     |     |     |     |     |     |

<210> 27  
 <211> 1440  
 <212> DNA  
 <213> homo sapiens

<400> 27

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| ctgtggatca | tccaatgtg   | gtactgtgaa  | ggcaaggagc | ttgaaaattc | cccagatatt | 120  |
| cacatcgtcc | aggcaggaaa  | tctgcactca  | ctgaccattg | cggaagcctt | tgaagaggac | 180  |
| acaggacgct | attcctgctt  | tgcttctaac  | atctatggga | cagattcgac | ttctgctgag | 240  |
| atttatatag | aaggggtttc  | ttcttctgac  | tcagaaggcg | accctaacaa | ggaagagatg | 300  |
| aatcgaatcc | agaagccaaa  | tgagggtgtca | tctcctccca | ctacctctgc | agtcattcct | 360  |
| ccagcagtac | cccaagccca  | gcatttgggtg | gcccaccttc | gtgtggcaac | catccagcag | 420  |
| tgtcagagcc | ccaccaatta  | cttgcaggga  | ttggatggaa | aacctatcat | tgcagctcct | 480  |
| gtgtttacaa | agatgctaca  | aaatttgtca  | gcttctgagg | gtcagctggg | tgtctttgaa | 540  |
| tgcagagtaa | aaggagctcc  | atctcctaag  | gttgagtggg | atagagaagg | gactttaata | 600  |
| gaagattctc | cagatttttag | gattttacag  | aaaaaacctc | gatccatggc | agagccagag | 660  |
| gagatttgca | ccttgggtcat | tgctgagggtg | tttgcagaag | attctgggtg | cttcacatgt | 720  |
| actgcaagca | acaaatacgg  | cacagtgtca  | agcattgcac | agctgcacgt | gagaggaaat | 780  |
| gaggacctca | gcaacaacgg  | gtctcttcac  | tcagccaact | cyaccaccaa | cctggcagct | 840  |
| attgagccac | agccctcccc  | accccactca  | gagcctccat | ctgtggaaca | accccccaaa | 900  |
| cccaaactcg | aggggggttct | ggtgaaccac  | aatgagcccc | ggtccagctc | caggattggg | 960  |
| cttcgtgtgc | acttcaacct  | gcctgaagat  | gacaaaggaa | gtgaagcatc | ctccgaggct | 1020 |



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ggtgtggtga ccaccagaca gaccaggccc gattctttsc aggagaggtt caacggacag 1080
gcaacaaaaa ccccagagcc ttctttcccc gtgaaagagc cccctccagt tctggccaaa 1140
cccaaacttg attccactca gttacaacag cttcataacc aagtcttact ggaacaacac 1200
caattgcaaa acccacctcc ttcattctct aaggagtttc ctttcarcat gactgttttg 1260
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cagacgttca gcttggcccc gcccgaagtat ttcttccctt ccacgaacac caccgcagca 1380
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<210> 28

<211> 479

<212> PRT

<213> homo sapiens

<220>

<221> VARIANT

<222> (1)...(479)

<223> Xaa = Any Amino Acid

<400> 28

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20          25          30
Glu Leu Glu Asn Ser Pro Asp Ile His Ile Val Gln Ala Gly Asn Leu
35          40          45
His Ser Leu Thr Ile Ala Glu Ala Phe Glu Glu Asp Thr Gly Arg Tyr
50          55          60
Ser Cys Phe Ala Ser Asn Ile Tyr Gly Thr Asp Ser Thr Ser Ala Glu
65          70          75          80
Ile Tyr Ile Glu Gly Val Ser Ser Ser Asp Ser Glu Gly Asp Pro Asn
85          90          95
Lys Glu Glu Met Asn Arg Ile Gln Lys Pro Asn Glu Val Ser Ser Pro
100         105         110
Pro Thr Thr Ser Ala Val Ile Pro Pro Ala Val Pro Gln Ala Gln His
115         120         125
Leu Val Ala Gln Pro Arg Val Ala Thr Ile Gln Gln Cys Gln Ser Pro
130         135         140
Thr Asn Tyr Leu Gln Gly Leu Asp Gly Lys Pro Ile Ile Ala Ala Pro
145         150         155         160
Val Phe Thr Lys Met Leu Gln Asn Leu Ser Ala Ser Glu Gly Gln Leu
165         170         175
Val Val Phe Glu Cys Arg Val Lys Gly Ala Pro Ser Pro Lys Val Glu
180         185         190
Trp Tyr Arg Glu Gly Thr Leu Ile Glu Asp Ser Pro Asp Phe Arg Ile
195         200         205
Leu Gln Lys Lys Pro Arg Ser Met Ala Glu Pro Glu Glu Ile Cys Thr
210         215         220
Leu Val Ile Ala Glu Val Phe Ala Glu Asp Ser Gly Cys Phe Thr Cys
225         230         235         240
Thr Ala Ser Asn Lys Tyr Gly Thr Val Ser Ser Ile Ala Gln Leu His
245         250         255
Val Arg Gly Asn Glu Asp Leu Ser Asn Asn Gly Ser Leu His Ser Ala
260         265         270
Asn Ser Thr Thr Asn Leu Ala Ala Ile Glu Pro Gln Pro Ser Pro Pro
275         280         285
His Ser Glu Pro Pro Ser Val Glu Gln Pro Pro Lys Pro Lys Leu Glu

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|                         |                     |                         |  |     |
|-------------------------|---------------------|-------------------------|--|-----|
| 290                     |                     | 295                     |  | 300 |
| Gly Val Leu Val Asn His | Asn Glu Pro Arg Ser | Ser Ser Ser Arg Ile Gly |  |     |
| 305                     |                     | 310                     |  | 315 |
| Leu Arg Val His Phe Asn | Leu Pro Glu Asp Asp | Lys Gly Ser Glu Ala     |  |     |
|                         |                     | 325                     |  | 330 |
| Ser Ser Glu Ala Gly Val | Val Thr Thr Arg Gln | Thr Arg Pro Asp Ser     |  |     |
|                         |                     | 340                     |  | 345 |
| Xaa Gln Glu Arg Phe Asn | Gly Gln Ala Thr Lys | Thr Pro Glu Pro Ser     |  |     |
|                         |                     | 355                     |  | 360 |
| Phe Pro Val Lys Glu Pro | Pro Pro Val Leu Ala | Lys Pro Lys Leu Asp     |  |     |
|                         |                     | 370                     |  | 375 |
| Ser Thr Gln Leu Gln Gln | Leu His Asn Gln Val | Leu Leu Glu Gln His     |  |     |
|                         |                     | 385                     |  | 390 |
| Gln Leu Gln Asn Pro Pro | Pro Ser Ser Pro Lys | Glu Phe Pro Phe Xaa     |  |     |
|                         |                     | 405                     |  | 410 |
| Met Thr Val Leu Asn Ser | Asn Ala Pro Pro Ala | Val Thr Thr Ser Xaa     |  |     |
|                         |                     | 420                     |  | 425 |
| Lys Gln Val Lys Ala Pro | Ser Ser Gln Thr Phe | Ser Leu Ala Arg Pro     |  |     |
|                         |                     | 435                     |  | 440 |
| Lys Tyr Phe Phe Pro Ser | Thr Asn Thr Thr Ala | Ala Thr Val Ala Pro     |  |     |
|                         |                     | 450                     |  | 455 |
| Ser Ser Ser Pro Val Phe | Thr Leu Ser Ser Ile | Pro Pro Gln Thr         |  |     |
|                         |                     | 465                     |  | 470 |
|                         |                     |                         |  | 475 |

100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500